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Management Measures

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INTRODUCTION

Management measures are means to control the entry of pollutants into surface waters. Management measures achieve nonpoint source (NPS) pollutant control goals through the application of nonpoint pollution control best management practices (BMPs), which may be technologies, processes, siting criteria, operating methods, or other alternatives.

Implementing Management Measures in Watersheds

Management measures can be implemented in either a preventive or restorative mode depending upon the state and local needs identified through the watershed planning process. Similarly, although management measures are generally considered to be technology-based, they can also be used as key elements of a water quality-based approach to solving identified water quality problems. Technology-based pollution control measures are identified based upon technical and economic achievability rather than on the cause-and-effect linkages between particular land use activities and particular water quality problems that drive water quality-based approaches.

The following sections are general summaries of USEPA guidance documents on national management measures to control nonpoint source pollution from the following categories:

- Urban Areas
- Agriculture
- Forestry
- Marinas and Recreational Boating
- Hydromodification
- Wetlands and Riparian Areas

Although IDEM has provided summaries of the national management measures for each of these categories, it does not preclude other state agencies or local watershed groups from implementing additional management measures in accordance with an approved watershed plan. These national management measures are intended to provide technical assistance to state and local program managers and other practitioners on the best available, most economically achievable means of managing runoff and reducing nonpoint source pollution of surface and ground waters.

URBAN AREA MANAGEMENT MEASURES

People and their actions are the most significant sources and causes of urban runoff and pollution. Uncontrolled or treated runoff from the urban environment and from construction activities can run off the landscape into surface waters. This runoff can include such pollutants as sediments, pathogens, fertilizers/nutrients, hydrocarbons, and metals. Pavement and compacted areas, roofs, reduced tree canopy, and open space increase runoff volumes that rapidly flow into our waters. This increase in volume and velocity of runoff often causes stream bank erosion, channel incision, and sediment deposition in stream channels. In addition, runoff from these developed areas can increase stream temperatures that along with the increase in flow rate and pollutant loads, negatively affect water quality and aquatic life.

Other common sources of urban pollution include improperly sited, designed, and maintained onsite wastewater treatment (septic) systems, pet wastes, lawn and garden fertilizers and pesticides, household chemicals that are improperly disposed of, automobile fluids, road deicing/anti-icing chemicals, and vehicle emissions.

The following information is a summary of the management measures described in the USEPA guidance document, *National Management Measures to Control Nonpoint Source Pollution from Urban Areas*, 2005 (http://www.epa.gov/owow/nps/urbanmm/). This guidance helps citizens and municipalities in urban areas protect bodies of water from polluted runoff that can result from everyday activities. These scientifically sound techniques are the best practices known today. The guidance will also help states to implement their NPS control programs and municipalities to implement their Phase II Stormwater Permit Programs.

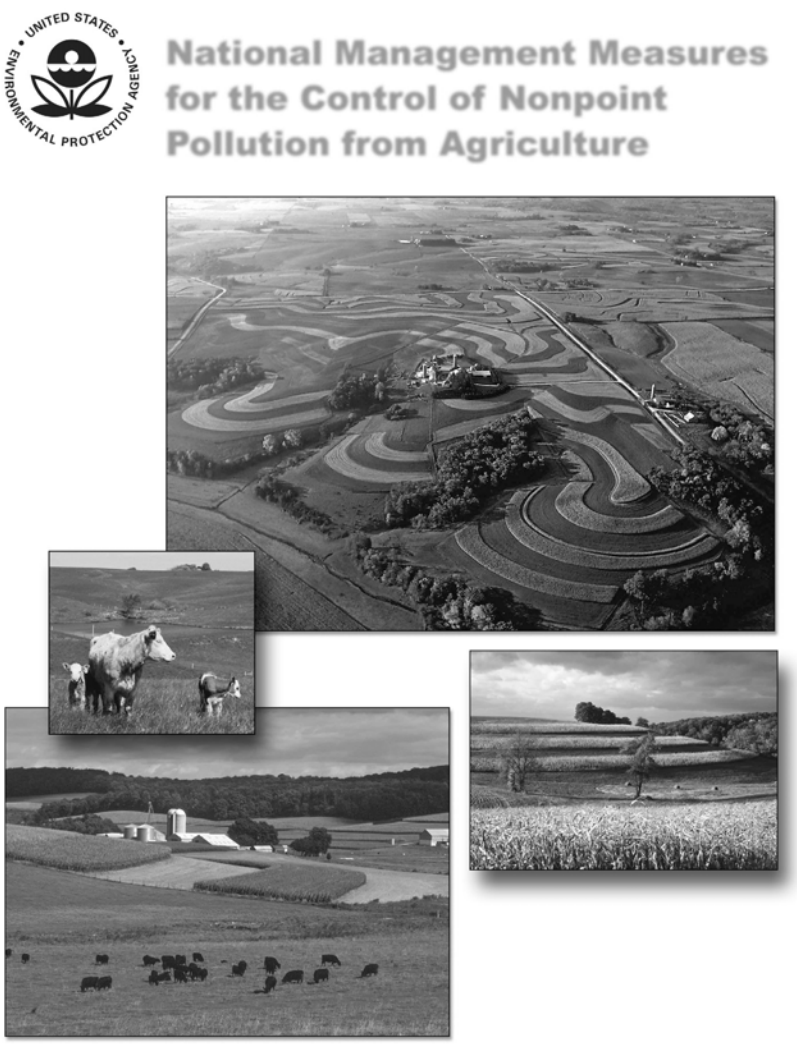
The implementation of management measures for urban runoff will reduce the generation of nonpoint source pollutants from existing development and control runoff and treat pollutants associated with new development and redevelopment. The implementation of the following management measures will also result in more consistent and widespread implementation of existing state NPS programs.

National Management Measures to Control Nonpoint Source Pollution from Urban Areas

AGRICULTURAL MANAGEMENT MEASURES

The following information is a summary of the management measures described in the USEPA guidance *National Management Measures to Control Nonpoint Pollution from Agriculture*, 2003 (http://www.epa.gov/owow/nps/agmm/index.html). This guidance document is intended to provide technical information to state program managers and others on the best available, economically achievable means of reducing NPS pollution of surface and ground water from agriculture. The guidance provides background information about agricultural NPS pollution, where it comes from, and how it enters the nation's waters; discusses the broad concept of assessing and addressing water quality problems on a watershed level; and presents up-to-date technical information about how to reduce agricultural NPS pollution.

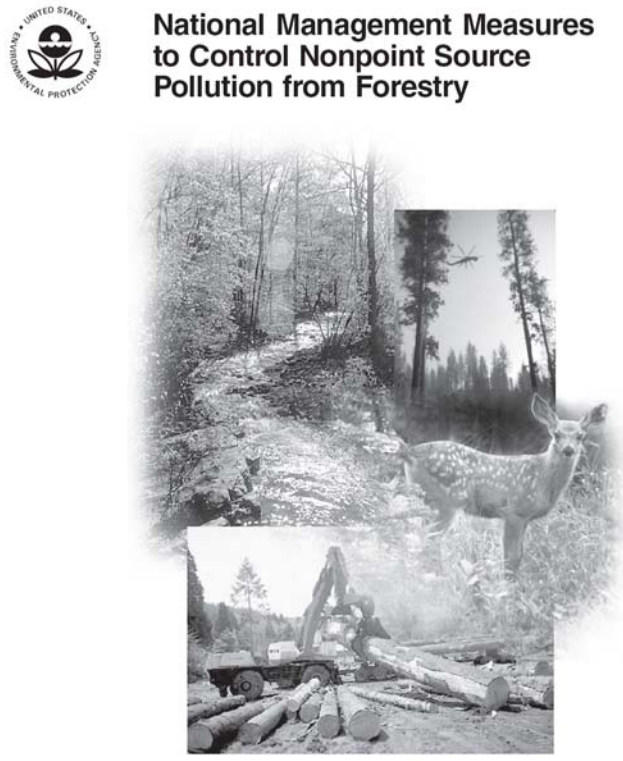
The implementation of agricultural management measures will reduce the generation on nonpoint source pollutants from agricultural activities and minimize the transport of pollutants from agricultural land to surface and ground waters.



FORESTRY MANAGEMENT MEASURES

The following information is a summary of the management measures described in the USEPA guidance *National Management Measures to Control Nonpoint Pollution from Forestry,* 2005 (http://www.epa.gov/owow/nps/forestrymgmt/). This guidance document is intended to provide technical assistance to state water quality and forestry program managers, nonindustrial private forest owners, industrial forest owners, and others involved with forest management on the best available, most economically achievable means of reducing the nonpoint source pollution of surface and ground waters that can result from forestry activities. The guidance provides background information about NPS pollution from forestry activities, including where it comes from and how it enters our waters. It presents the most current technical information about how to minimize and reduce NPS pollution to forest waters, and it discusses the broad concept of assessing and addressing water quality problems on a watershed level. By assessing and addressing water quality problems at the watershed level, state program managers and others involved with forest management can integrate concerns about forestry activities with those of other resource management activities to identify conflicting requirements and provide balance between short-term impacts and long-term benefits. This approach can maximize the potential for overall improvement and protection of watershed conditions and provide multiple environmental benefits.

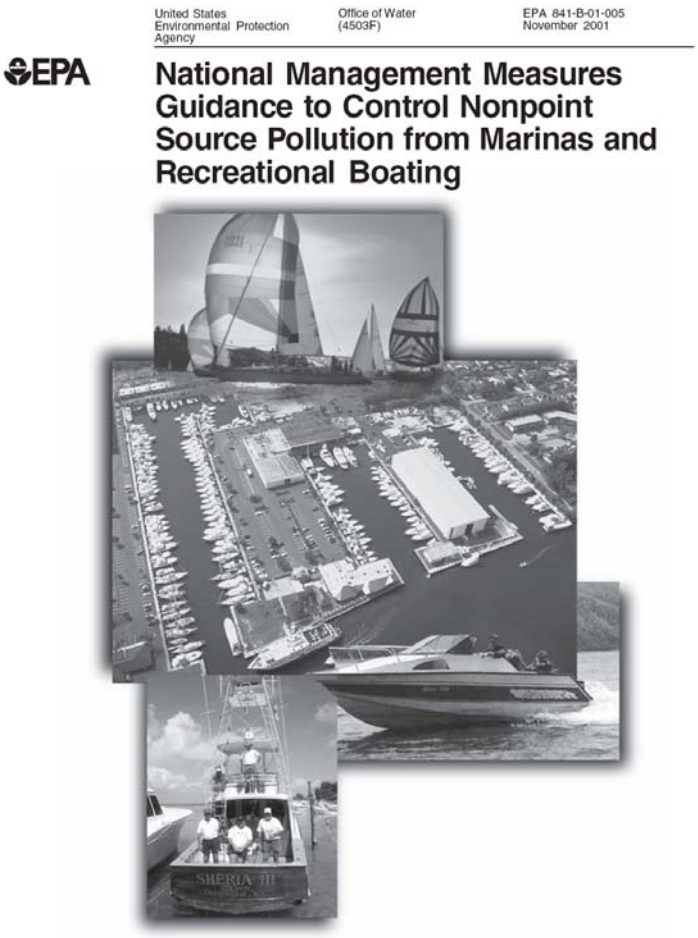
The implementation of the following management measures and their associated management practices applied at forest harvest sites and along roads provide essential control of erosion and sedimentation and will limit, as much as possible, the potential for water pollution that can result from forest harvesting activities.



MARINAS/BOATING MANAGEMENT MEASURES

The following information is a summary of the management measures described in the USEPA guidance *National Management Measures to Control Nonpoint Pollution from Marinas and Recreational Boating,* 2001 (http://www.epa.gov/owow/nps/mmsp/index.html). This document provides guidance to states, territories, authorized tribes, and the public regarding management measures that may be used to reduce nonpoint source pollution from marinas and recreational boating activities. The guidance is intended to provide technical assistance to state program managers and others on the best practicable means of reducing nonpoint source pollution of surface waters from marinas and recreational boating. The guidance provides background information about NPS pollution from marinas and recreational boating, including where it comes from and how it enters the nation's waters, and technical information about how to reduce nonpoint source pollution from marinas and recreational boating. It also discusses the relationship of marinas to the watersheds in which they are located.

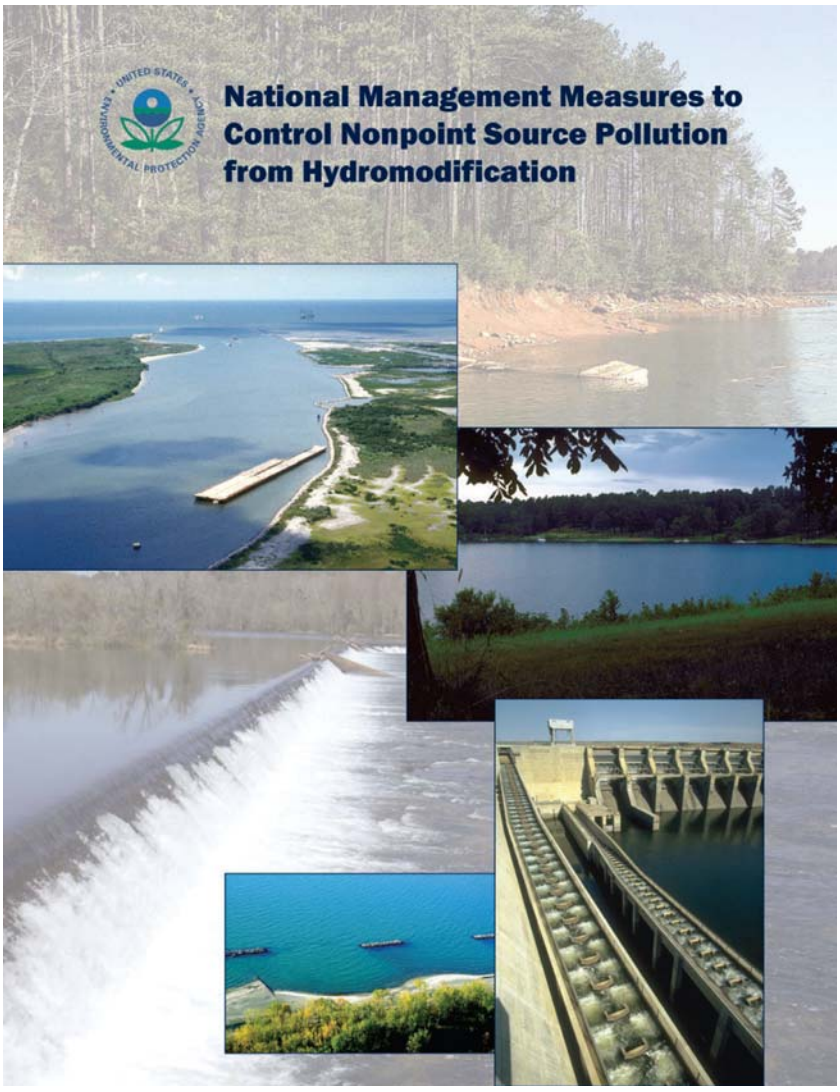
The implementation of management measures for marinas and recreational boating will reduce the runoff of pollutants to marine waters and mitigate the impacts associated with the siting, design, operation, and maintenance of new and expanding marinas.



HYDROMODIFICATION MANAGEMENT MEASURES

The following information is a summary of the management measures described in the USEPA guidance *National Management Measures to Control Nonpoint Pollution from Hydromodification,* 2007 (http://www.epa.gov/owow/nps/hydromod/index.htm). This guidance document provides background information about NPS pollution and offers a variety of solutions for reducing NPS pollution resulting from hydromodification activities.

The implementation of management measures for hydromodification activities are intended to prevent degradation of the physical and chemical characteristics of surface waters and detrimental changes to instream and riparian habitat resulting from the transport of pollutants, and from alterations in the supply of sediment and freshwater. The measures will minimize erosion, control sediment runoff, prevent downstream contamination, and protect the quality of water and aquatic habitat in reservoirs. The measures will also protect eroding streambanks and shorelines that constitute a nonpoint pollution source.



WETLAND AND RIPARIAN MANAGEMENT MEASURES

The following information is a summary of the management measures described in the USEPA guidance *National Management Measures to Protect and Restore Wetlands and Riparian Areas for the Abatement of Nonpoint Source Pollution,* 2005 and can be found at http://www.epa.gov/owow/nps/wetmeasures. This guidance document describes practices to reduce NPS pollution of surface waters and ground water through the protection and restoration of wetlands and riparian areas, as well as the implementation of vegetated treatment systems. The guidance provides background information about NPS pollution, including where it comes from and how it enters the nation's waters; discusses the broad concept of assessing and addressing water quality problems on a watershed level; and presents recent technical information about how certain types of NPS pollution can be reduced effectively through the implementation of these management measures. This document is not intended to be used as a design guide for restoring or constructing wetlands, nor should it replace input from experts during the planning or implementation phases of wetland or riparian area creation or restoration.